



恩泰科（北京）科技有限公司

Iontech Beijing technologies Co., Ltd



INDUSTRIAL EDI

About IONTECH EDI

IONTECH is an innovative technology enterprise specializing in the R&D and manufacturing of EDI. We are committed to delivering high-efficiency and eco-friendly ultrapure water treatment solutions for global clients. The company boasts an experienced R&D and production team, equipped with advanced manufacturing facilities, and maintains internationally leading core technologies.

IONTECH employ innovative electrodeionization technology that eliminates the need for chemical regeneration. Characterized by low energy consumption, high water utilization rates, stable operation, and superior output quality, they ensure continuous and highly efficient system performance. With proven product excellence and professional services, IONTECH solutions have been widely implemented across diverse sectors including chemical processing, thermal power, nuclear power, electronics, photovoltaics, metallurgy, pharmaceuticals, and laboratory applications. The company has successfully completed over 1,000 project cases across more than 20 countries and regions.

Moving forward, IONTECH will continue to leverage technological innovation to provide more efficient and sustainable water treatment solutions, contributing to global water sustainability.

Features of EDI in IT- DS Series

- ❖ Adopting double O-ring seals to ensure leak free operation
- ❖ The water quality of the produced water is better than that of the mixed bed effluent and does not require the use of chemical agents for regeneration
- Continuous water production and stable water quality
- ❖ No need to use acid-base neutralization system and resin tank
- ❖ Excellent electrical insulation property
- ❖ Continuous operation at 7 bar (100psi) and 45° C (113°F)

Operation Environment for IONTECH® IT-DS Industrial EDI

The stack shall be installed indoors without direct sunlight.
The maximum indoor ambient temperature shall not exceed 45°C (113°F).

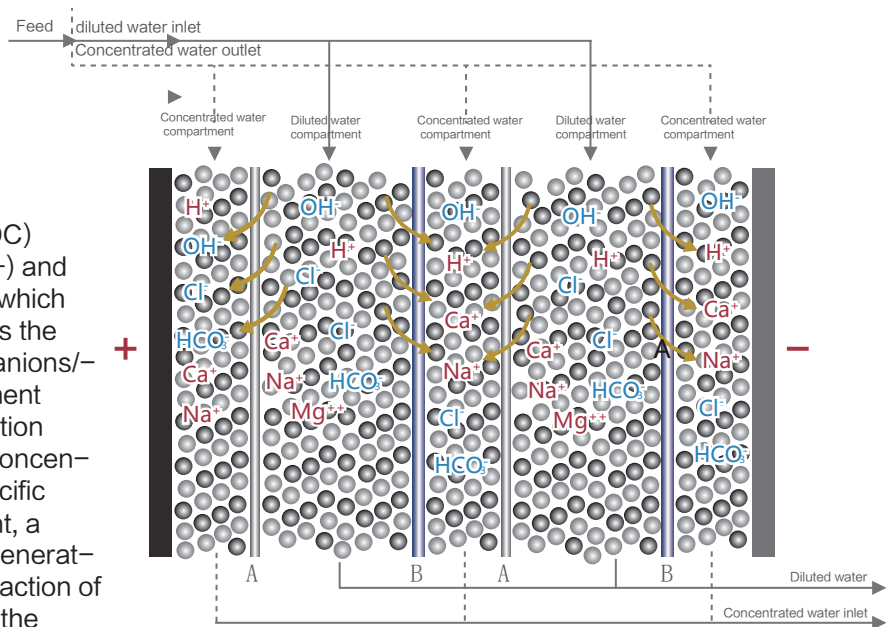
Quality Standards

EDI manufacturer with ISO 9001:2000 certification
Each EDI shall be inspected before the delivery to make it comply with strict IONTECH standards and industry standards



Working Principle for IONTECH industrial EDI

EDI works through a direct current (DC) electric field uploaded at the anode (+) and cathode (-) of the EDI module ends, which drives the ions exchange with the ions the surface of resin to move rapidly. the anions/-cations in the diluted water compartment pass selectively through the anion/cation exchange membrane and enter the concentrated water compartment. In the specific area of the diluted water compartment, a large amount of H^+ and OH^- can be generated through water splitting. Under the action of DC electric field, H^+ and OH^- replace the inorganic ions bound to the exhausted resin to complete regeneration and realize continuous and efficient operation.

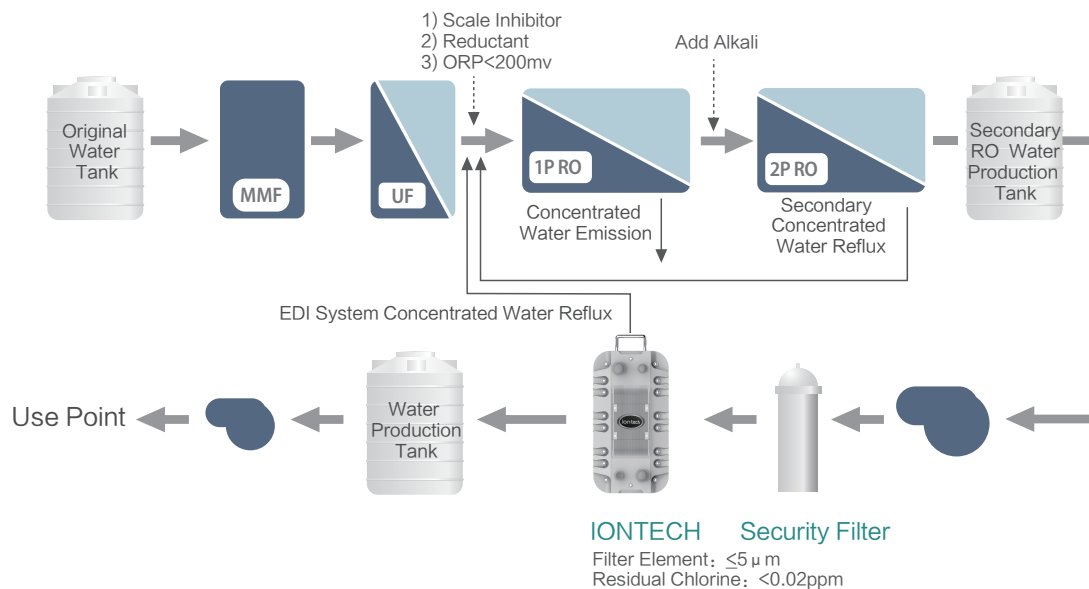


Note: A is an anionic selective exchange membrane, which only allows anions to pass through
B is a cation selective exchange membrane, which only allows cations to pass through

The direction of water flow in and out of the EDI is based on the principle of selecting the upper pipeline for water inflow. In the case of insufficient renovation space size, diluted water can be selected to enter from below and concentrated water from above.

The water flow shall pass through a security filter with $5\mu m$ precision before its entering into the EDI. The concentrated water flows back to the UF production tank, which can improve the overall recycling rate of water.

Pure Water Process of IONTECH industrial EDI



Caution:

- 1) It is prohibited that RO produced water directly enters into the EDI and there must be one secondary RO produced water tank between RO and EDI for buffer;
- 2) It is prohibited that EDI produced water directly enters the use end and there must be one EDI produced water tank between EDI and use end for buffer.

Storage & Transportation of IONTECH industrial EDI

Product Presentation

Feed Water Specifications

Feed Water Source	2RO permeate
Feed Water Conductivity	$\leq 10\mu\text{S/cm}$
Silica (SiO_2)	<1 ppm
Iron (as Fe, Mn, S)	<0.01 ppm
Total Chlorine (as Cl_2)	<0.02 ppm
Total Hardness (as CaCO_3)	<1.0 ppm
Dissolved Organics (TOC as C)	<0.5 ppm
PH	4– 11
Temperature	5– 45°C
Inlet Pressure	<100 psi (7 bar)

Module Performance

Operating Parameters	
Recovery	90 - 95%
Pressure Drop Range at Nominal Flow	20 - 36 psi (1.4 - 2.5 bar)
Production water quality	
production Water resistivity	Minimum flow rate > 17M Ω .cm Nominal Flow > 15M Ω .cm maximum flow > 7M Ω .cm
Silica (SiO_2) Removal	90 - 99% (depending on feed conditions)

*In order to ensure the long-term, stable, high-quality, and continuous operation of the EDI membrane stack, it is recommended to adopt two-stage RO production for EDI inlet water. This is currently the most reliable and mature process design for ultra pure water systems. The production of two-stage RO can maximize the functionality of EDI and is also the optimal treatment plan to extend the service life of EDI.

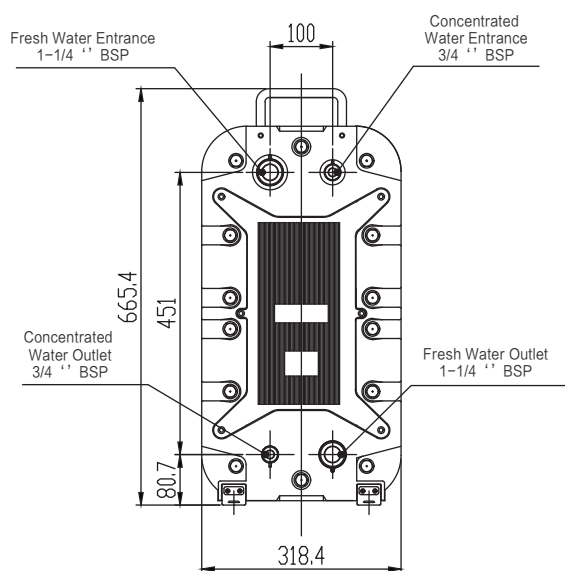
Equipment Standard Configuration

Equipped with metric and English conversion joints and 3-meter cable

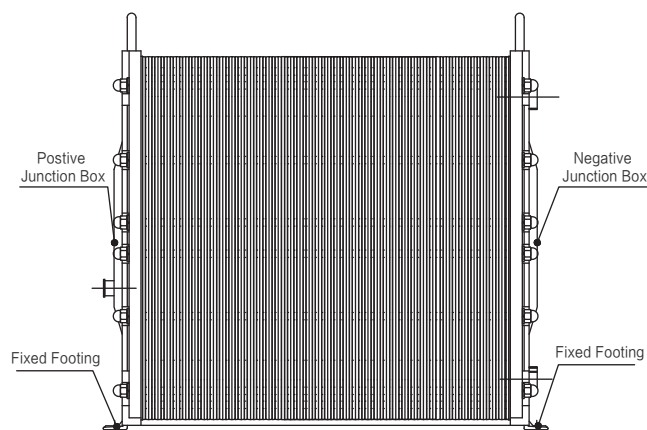
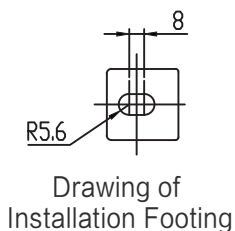
Flow and physical specifications

Moduel Number	Nominal Flow (m^3/h)	Flow range (m^3/h)	DC Voltage (V)	DC Current (A)	Transport Weight (KG)
IT-DS05-S	0.44	0.22–0.67	0–55	0–5	55
IT-DS10-S	1.0	0.55–1.65	0–135	0–5	71
IT-DS20-S	2.0	1.0–3.1	0–240	0–5	94
IT-DS30-S	3.3	1.7–5.1	0–320	0–5	124
IT-DS50-S	5.0	2.55–7.7	0–400	0–5	170

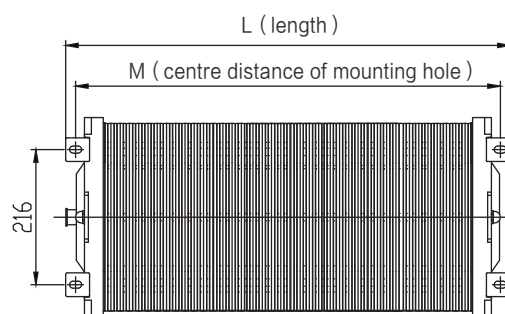
Industrial EDI installation dimensions



Right View



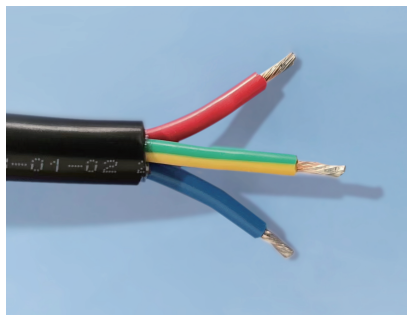
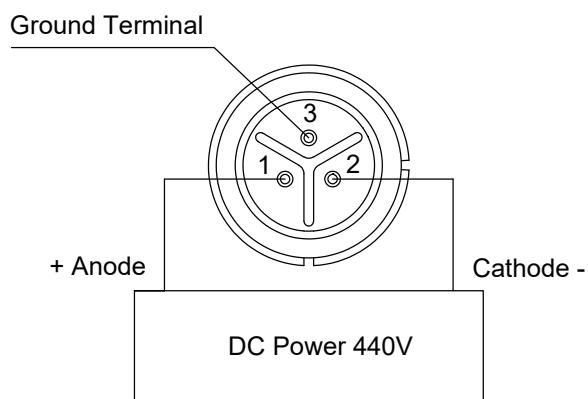
Front View



Bottom View

Moduel Number	IT-DS05-S	IT-DS10-S	IT-DS20-S	IT-DS30-S	IT-DS50-S
Dilution inlet/outlet	1-1/4" BSP	1-1/4" BSP	1-1/4" BSP	1-1/4" BSP	1-1/4" BSP
Concentrated inlet/outlet	3/4" BSP	3/4" BSP	3/4" BSP	3/4" BSP	3/4" BSP
L (mm)	175	264	384	559	786
M (mm)	142	232	350	529	755
H (mm)	665.4	665.4	665.4	665.4	665.4
W (mm)	318.4	318.4	318.4	318.4	318.4

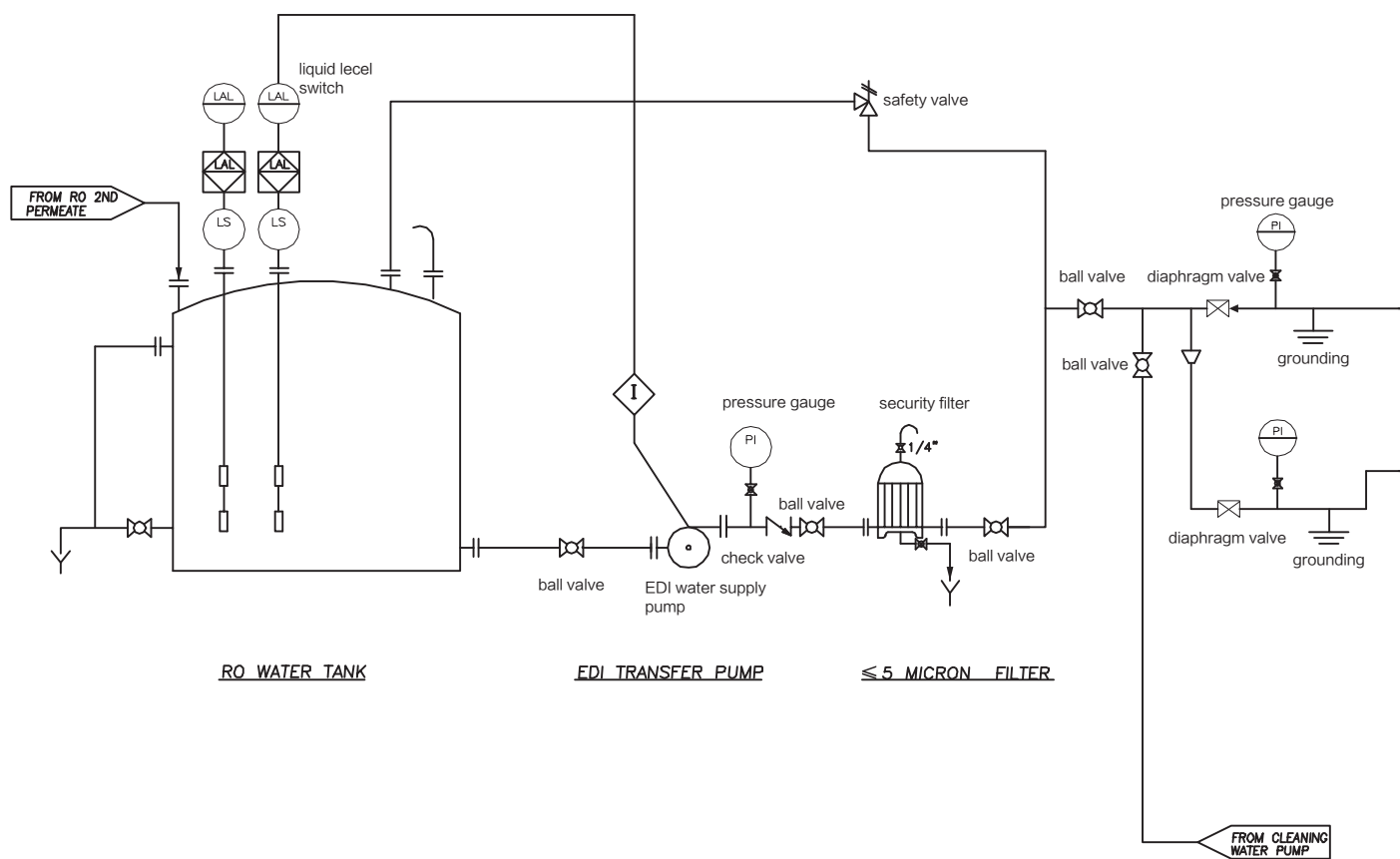
IONTECH industrial-type EDI Power Connection



Red: Anode
Chartreuse: Ground Terminal
Blue: Cathode

According to different colors, connect to the polarity corresponding to the DC power supply.

IONTECH industrial-type EDI PID Flow Chart



Storage & Transportation of IONTECH Industrial-type EDI

All the IONTECH EDI shall be stored under seal with moist interior after tests. Stacks that have been stored for long period shall be rinsed to be qualified and drained, and then sealed with the inlet and outlet plugged completely.

Please store IONTECH EDI as follows:

Store indoors or in a warehouse, without direct sunlight

Temperature Conditions:

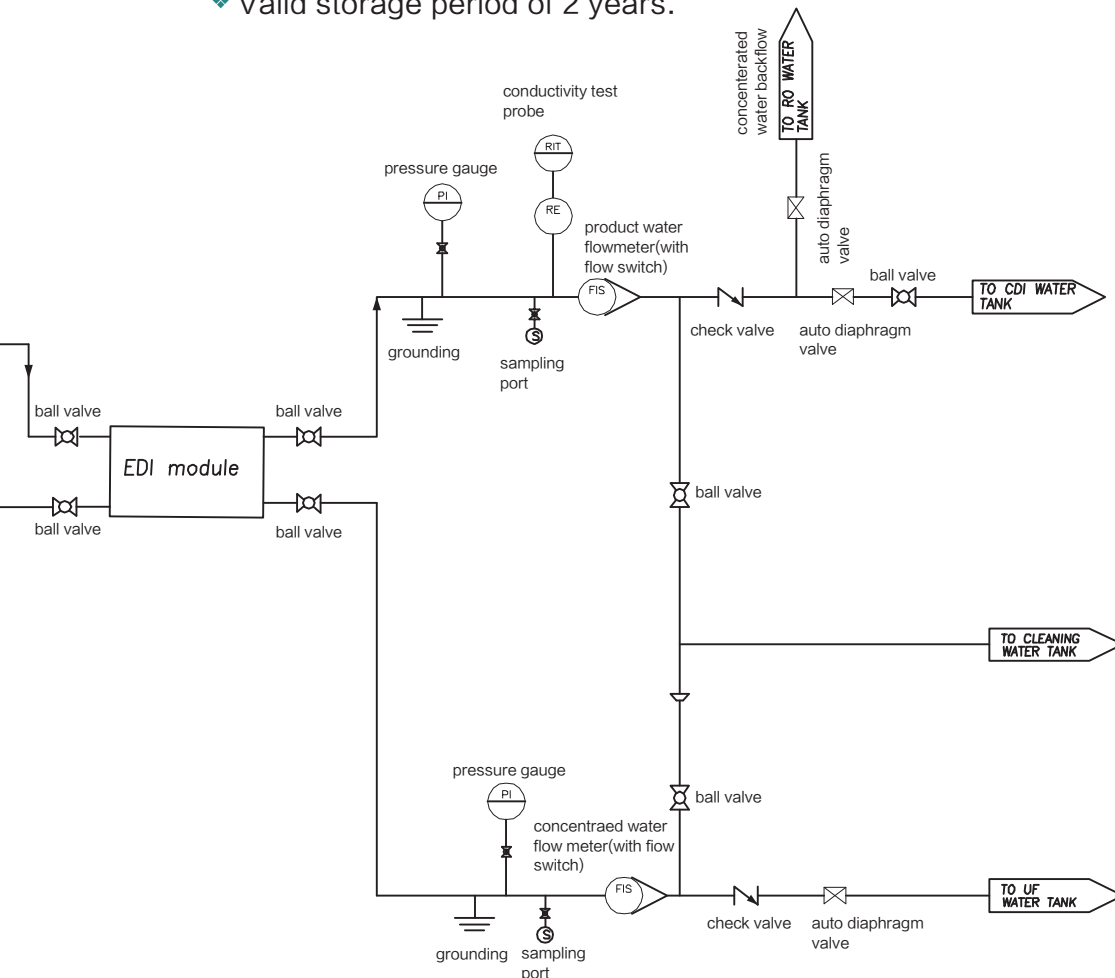
For EDI in IT-DS series: Max. 32° C, Min. 5° C

Storage In Short Period:

- ❖ Close the main inlet valve of the EDI membrane stack;
- ❖ Remove the inlet & outlet valves of each EDI module and discharge the water inside the EDI module as much as possible;
- ❖ Observe the outlet of EDI module until there is no water flows out, and install each valve on the inlet & outlet of the EDI module;
- ❖ Close the inlet & outlet valves of each EDI module. Do not open/close the valves during the shutdown and storage.

Storage In Long Period:

- ❖ Keep new EDI in their original packaging;
- ❖ Drain the water inside EDI and plug the sealing for the inlet and outlet (no need to fill in propylene glycol);
- ❖ Valid storage period of 2 years.



IONTECH Industrial EDI Application Cases



Production Flow Rate 2250 m³/H
Produced Water Quality ≥16 MΩ·cm
Operating Voltage 100V/2.0A
Application Example ningxia XX Energy
(Chemical)



Production Flow Rate 1800 m³/H
Produced Water Quality ≥16 MΩ·cm
Operating Voltage 100V/2.0A
Application Example Lianyungang XX Energy(CH and PG)

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